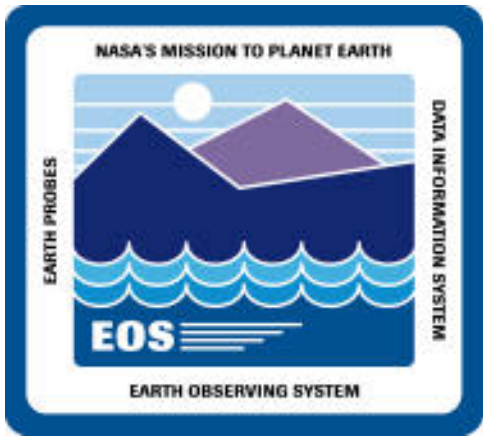
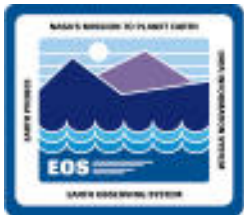


ECS Integration and Test

Teraisa Patterson

3 November 1995

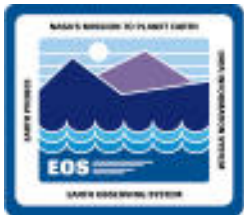
Agenda



ECS Integration and Test

- Build-Thread Integration Test Plan
- Integration and Test Schedule
- Test Platforms
- Tools
- Test Data

Test Documents & Home Page



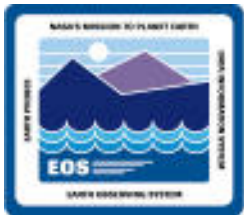
ECS Integration and Test Documents

- **307/329-CD-004-001 Rel B SDPS Dev/Rel Plan for ECS Project**
- **307/329-CD-005-001 Rel B CSMS Dev/Rel Plan for ECS Project**
- **319/402-CD-003-001 Rel B Segments/System Integration and Test Plan for the ECS Project**
- **403-CD-002-001 Rel B Verification Specification for the ECS Project**

Home Pages

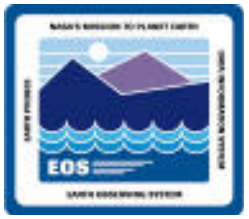
- **IDR-B: http://edhs1.gsfc.nasa.gov/waisdata/toc/idrb_cdrtoc.html**
- **Release B: http://newsroom.hitc.com/relmgt/open/RelsB/Docs.html**
- **I&T-B: http://newsroom.gsfc.nasa.gov/relmgt/open/RelsB/I_and_T.html**

Rel B SDPS/CSMS Test Objectives



- **To verify ECS System Operations to Include:**
  - **Data Ingest and Validation**
  - **On-Demand Production**
  - **Accounting and Billing**
  - **Client/User System Access**
  - **LIM and DIM**
  - **SMC Security**
  - **Fault and Performance Management**
  - **System Operability**
  - **Multi-DAAC Planning and Scheduling**
  - **Management Logistics**
  - **Release A Regression Testing**

Rel A vs. Rel B Functionality



Release A

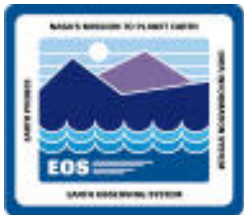
- N/A
- Basic local management
- Minimal processing
- SMC capabilities are mainly performed manually

- N/A
- N/A
- Inter-DAAC Planning and Scheduling
- Simple data searches

Release B

- Account and Billing
- LIM and DIM
- On-Demand Production
- SMC security, fault, and performance management are automated
- Subsetting and Subsampling
- Subscriptions
- Multi-DAAC Planning and Scheduling
- More complex data searches, i.e. coincident searches across data sets.

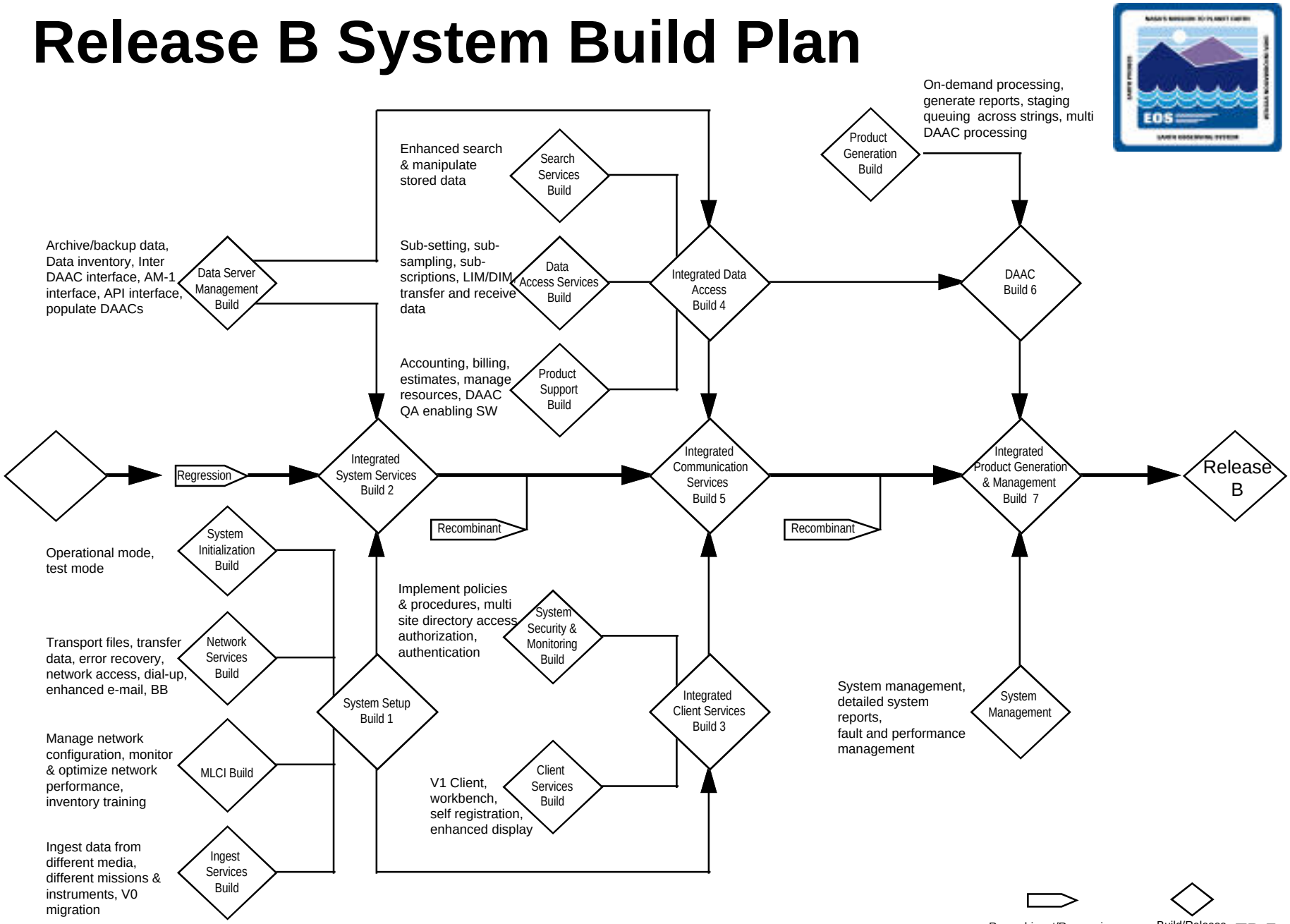
Build/Thread Methodology



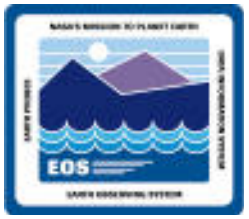
Build/Thread Methodology

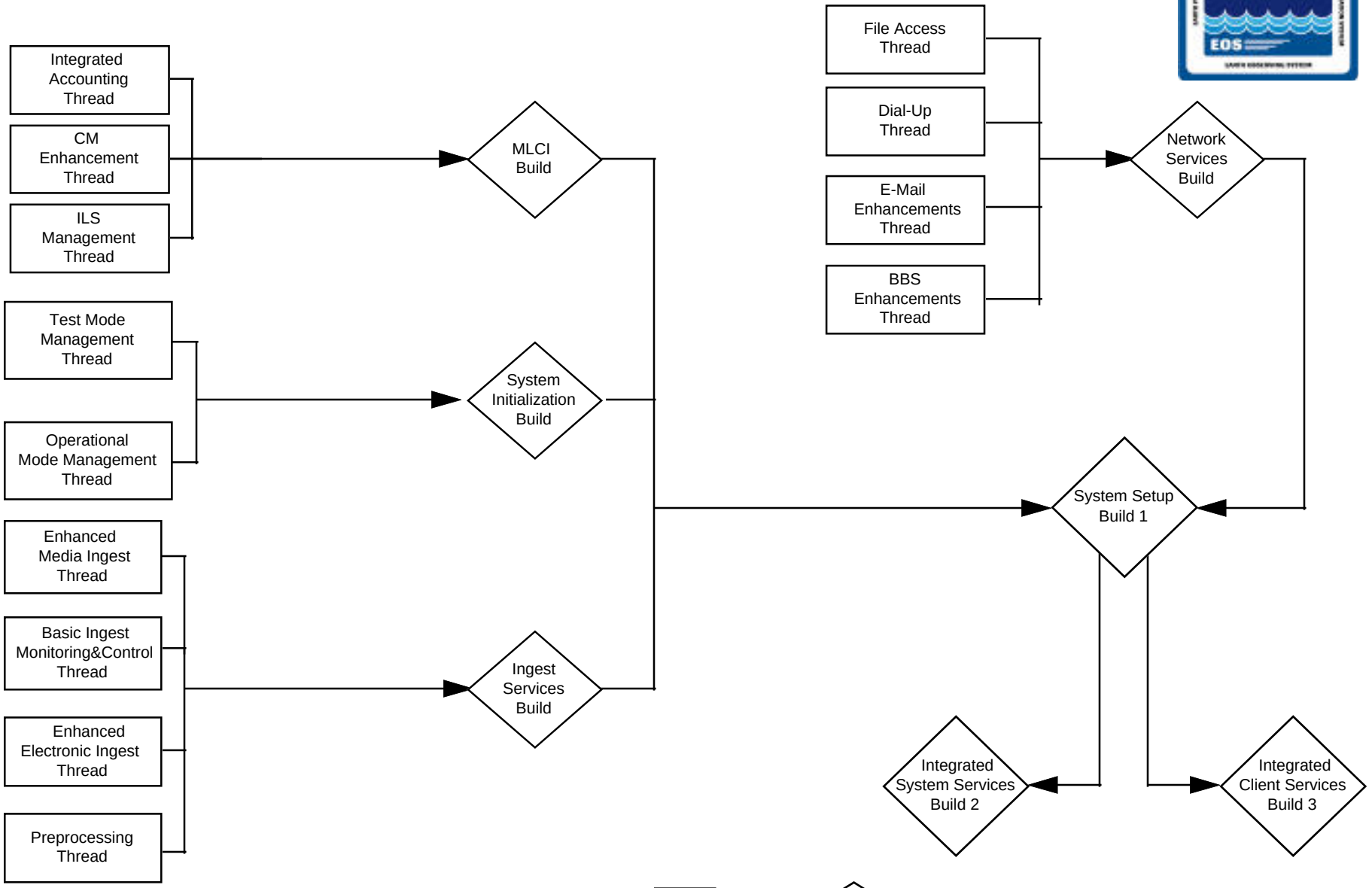
- Detailed description can be found in 319/402-CD-003-001 Rel B Segments/System Integration and Test Plan for the ECS Project
- Builds and Threads are defined by examining operational concepts, Level 3 and Level 4 requirements and system design specifications.
- The Thread/Build Diagram acts as the basis for definition of test cases.
- Test cases provide the basis for development of detailed build and thread test procedures.

Release B System Build Plan



System Setup Build 1 Test Diagram

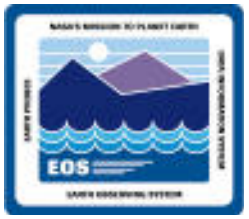




Proposed Release B Implementation Schedule

Available in hard copy only.

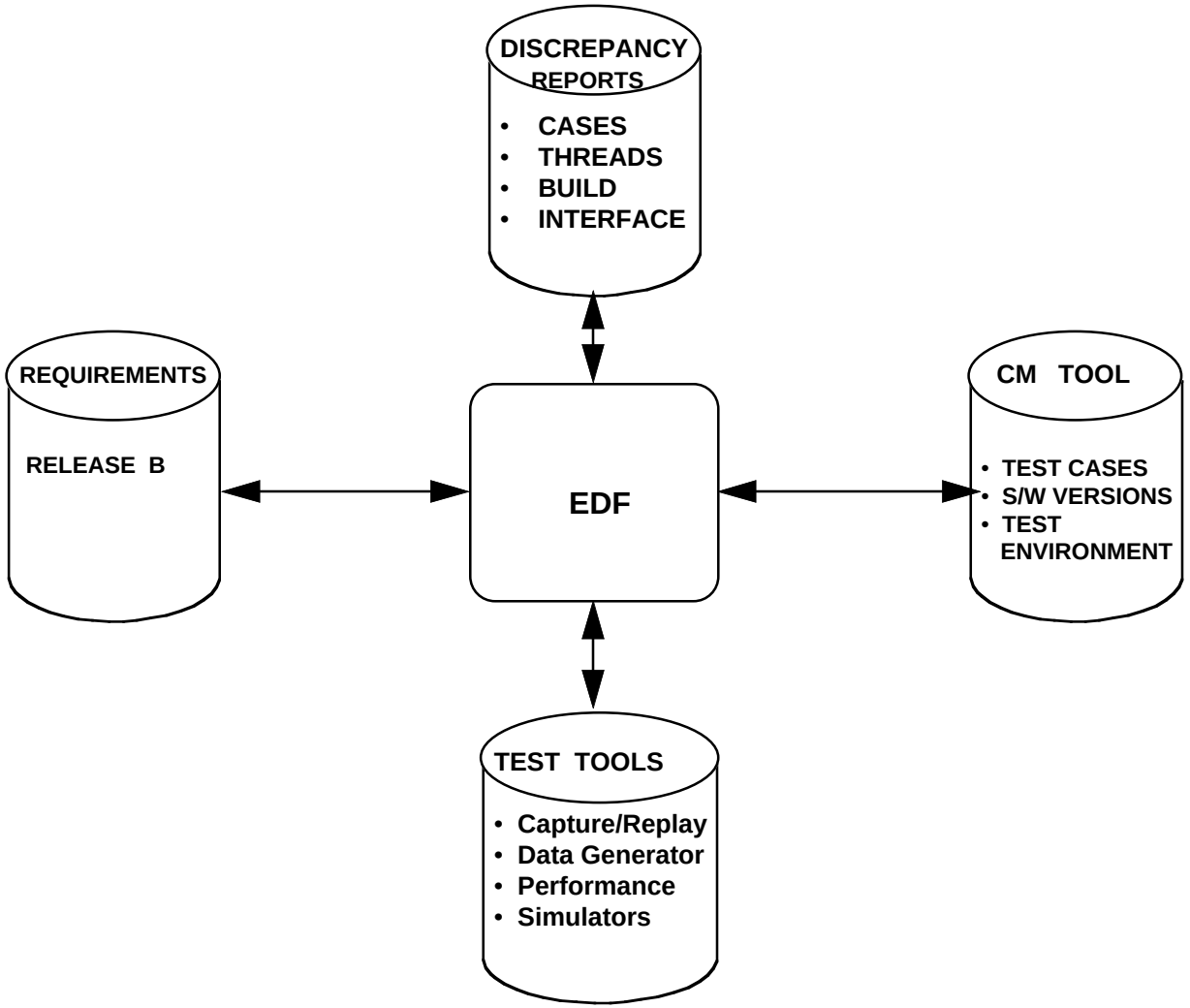
Release B I&T Platform



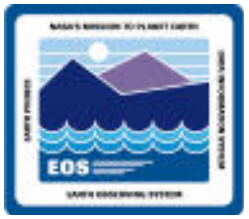
ECS Development Facility (EDF) Test Bed

- **Real-Time Integrated System (RITS)**
  - **Client Workstations**
  - **Test Manager**
  - **External Interface Simulators**
  - **DAAC Simulators**
- **Mini-DAAC**
  - **Data Server**
  - **Planning and Data Processing**
  - **Local System Management (LSM)**
  - **System Monitoring and Coordination Center (SMC)**
  - **Ingest Server**

Integrated Test Environment



SI&T Tool Suite



Function	Requirement Traceability	Case Tool	Compiler	Office Auto-Mation	Discrepancy Reporting	Capture/ Replay Tool	Network Analyzer/ Monitor	Network Management	Performance	Memory Tool	Tools Under Consideration
Selected Tool	RTM	IDE Software Through Pictures	C++	Microsoft Office	DDTS	XRunner	Sniffer Network Analyzer	OpenView	Netperf LoadRunner	Purify/ Pure Coverage	OPNET McCabe Battlemap
		Configuration Management							(ClearCase)		
Repository Data	Requirements	Software Design	In-House Developed Test Software	Test Plans Test Reports Documents	Discrepancy Reports DR Status	Test Scripts	Network Analysis Results	Network Status History	Performance Analysis Results	Memory Analysis Result	Test Results

ECS Internal Interface
Simulators Being Developed

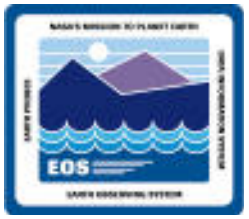
TRMM SOURCE
TSDIS SINK
PGE

RITS

Performance Monitoring/ Reporting

HITC Developed Tools

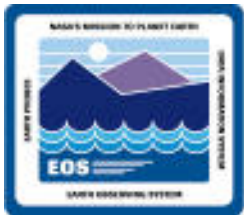
Release B I&T Data Requirements



Data to support the following:

TRMM - CERES, LIS, VIRS, PR, TMI
EOS AM-1 - ASTER, CERES, MISR, MODIS, MOPPIT
Landsat 7 - ETM+
FOO - COLOR
ADEOS II - SeaWinds
ALT RADAR - MR, DFA
ACRIMSAT - ACRIM
METEOR - SAGE III
ERS-1&2 - SAR
JERS-1 - SAR
RADARSAT - SAR

Release B Test Data Needs



Goals:

•To work with the Science Office to determine the fidelity of the datasets

- To identify characteristics, source and formats

•Baseline target list of datasets before CDR

- Work with the TDS working group (Dr. Reber) to define the target list

•Need a good sampling of datasets by October 1996

- Reuse test datasets from Release A testing